

AUTOMATED APPARATUS AND METHOD FOR FRUIT TESTING

ABSTRACT OF DISCLOSURE

[An intrusion plunger type fruit tester provides an
5 electrically powered motor carrying an encoder to sense rotary
velocity of its drive shaft and present the data though a
feed-back circuit to an associated computer that regulates
input power to the motor to maintain a predetermined rotary
velocity of the rotor. Power is transmitted from the motor
10 drive shaft through a speed reducing transmission to a ball
screw motion translator that interconnects a plunger through
a strain block to move the plunger lineally into a fruit to be
tested. The force required for plunger penetration at
predetermined data points in its trajectory is measured by
15 plural bridge interconnected strain gauges carried by the
strain block and the force and plunger position data is
transmitted to the associated computer. Computer software
controls plunger motion through feedback circuitry, determines
plunger position and records and processes resistive pressure
20 to plunger motion at predetermined intervals. The associated
computer provides data storage, display and analysis. The
resistance to plunger motion is determinable to 0.016 pound
and plunger position is determinable to at least one part in
32,000 per lineal inch. Methods of analysis are presented to
25 relate the measured data to fruit condition, history and
maturation and to predict fruit condition at future times.]